

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- Sub*
- (i) APPLICANTS: SeaTek Marine Biotechnology, Inc  
Kelly, Michael T.  
University of British Columbia  
Andersen, Raymond J.  
Gerard, Jeff
- (ii) TITLE OF INVENTION: CYCLIC DECAPEPTIDE ANTIBIOTICS
- (iii) NUMBER OF SEQUENCES: 74
- (iv) CORRESPONDENCE ADDRESS:  
(A) ADDRESSEE: Gowling, Strathy & Henderson  
(B) STREET: Commerce Court West, Suite 4900  
(C) CITY: Toronto  
(D) STATE: Ontario  
(E) COUNTRY: CANADA  
(F) ZIP: M5L 1J3
- (v) COMPUTER READABLE FORM:  
(A) MEDIUM TYPE: Floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30
- (vi) CURRENT APPLICATION DATA:  
(A) APPLICATION NUMBER: CA PCT/CA97/00529  
(B) FILING DATE: 25-JUL-1997  
(C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:  
(A) NAME: Nassif, Omar A.  
(C) REFERENCE/DOCKET NUMBER: T8463333WO
- (ix) TELECOMMUNICATION INFORMATION:  
(A) TELEPHONE: (416) 862-5775  
(B) TELEFAX: (416) 862 7661

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular
- (ix) FEATURE:  
(A) NAME/KEY: Modified-site  
(B) LOCATION: 1  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred"
- (ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 3  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 4  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. D- Stereochemistry is preferred"

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 5  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 6  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 7  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. D- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 8  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 9  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 10  
(D) OTHER INFORMATION: /note= "Stereochemistry may be  
either L- or D-. L- Stereochemistry is preferred."

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Val	Xaa	Leu	Tyr	Pro	Phe	Phe	Asn	Asp	Tyr
1				5				10	

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 1
- (D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 4
- (D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. D- Stereochemistry is preferred"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 5
- (D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 7

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(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. D- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 8

(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 9

(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 10

(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Val	Xaa	Leu	Tyr	Pro	Phe	Phe	Asn	Asp	Trp
1				5					10

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 1

(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 3

(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

066260" EFBCTH060

(A) NAME/KEY: Modified-site  
(B) LOCATION: 4  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. D- Stereochemistry is preferred"

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 5  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 6  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 7  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. D- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 8  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 9  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 10  
(D) OTHER INFORMATION: /note= "Stereochemistry may be either L- or D-. L- Stereochemistry is preferred."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site  
(B) LOCATION: 1  
(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Butyrine"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Xaa Xaa Leu Tyr Pro Phe Phe Asn Asp Tyr  
1                      5                      10

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 1
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Butyrine"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Xaa Xaa Leu Tyr Pro Phe Phe Asn Asp Trp  
1                      5                      10

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 1
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Butyrine"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

0606260 "ETBE-1060"

Xaa Xaa Leu Tyr Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: circular

(ix) **FEATURE:**

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Dbu"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Val Xaa Leu Tyr Pro Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Dbu"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Val Xaa Leu Tyr Pro Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR/SEQ ID NO:9:

- (i). SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 10 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS:
  - (D) TOPOLOGY: circular

(ix) FEATURE:

- ```
(A) /NAME/KEY: Modified-site
(B) LOCATION: 2
(D) OTHER INFORMATION: /product= "Dbu"
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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) **FEATURE:**

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10;

Val Xaa Ile Tyr Pro Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION/ SEQ ID NO:11:

Val Xaa Ile Tyr Pro Phe/Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID/NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) **FEATURE:**

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Val Xaa ~~Ile~~ Tyr Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:



- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /product= "alle"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Val Xaa Xaa Tyr Pro Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /product= "alle"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Val Xaa Xaa Tyr Pro Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site

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(B) LOCATION: 3

(D) OTHER INFORMATION: /product= "alle"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Val Xaa Xaa Tyr Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS :

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 3

(D) OTHER INFORMATION: /product= "Nva"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Val Xaa Xaa Tyr Pro Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO. 17:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS

(D) TOPOLOGY: circular

(ix) **FEATURE:**

(A) NAME/KEY: Modified-site

(B) LOCATION: /2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 3

(D) OTHER INFORMATION: /product= "Nva"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Val Xaa Xaa Tyr Pro Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /product= "Nva"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Xaa | Tyr | Pro | Trp | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Cyclopropylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Xaa | Tyr | Pro | Phe | Phe | Asn | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

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(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /product= "Nle"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Xaa | Tyr | Pro | Phe | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 3
- (D) OTHER INFORMATION: /product= "Nle"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Xaa | Tyr | Pro | Trp | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2

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(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 4

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is p-fluorophenylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Val Xaa Leu Xaa Pro Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 4

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is p-fluorophenylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Val Xaa Leu Xaa Pro Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 4

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is p-fluorophenylalanine"

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Val Xaa Leu Xaa Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Val Xaa Leu Trp Pro Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Val Xaa Leu Trp Pro Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Val Xaa Leu Trp Pro Trp Phe Asn Asp Trp

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## (2) INFORMATION FOR SEQ ID NO:31:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

## (ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

## (ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 4
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Thienylalanine"

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Val Xaa Leu Xaa Pro Phe Phe Asn Asp Tyr  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:32:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

## (ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

## (ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 4
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Thienylalanine"

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Val Xaa Leu Xaa Pro Phe Phe Asn Asp Trp  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:33:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

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(A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(A) NAME/KEY: Modified-site  
(B) LOCATION: 4  
(D) OTHER INFORMATION: /product= "OTHER"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Val Xaa Leu Xaa Pro Trp Phe Asn Asp Trp  
1 5 10

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(A) NAME/KEY: Modified-site  
(B) LOCATION: 5  
(D) OTHER INFORMATION: /product= "OTHER"

```
/note= "Where Xaa is Azetidine-2-carboxylic acid"
```

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Xaa | Phe | Phe | Asn | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(A) NAME/KEY: Modified-site  
(B) LOCATION: 5

[illegible]

(D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is Azetidine-2-carboxylic acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Val Xaa Leu Tyr Xaa Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 5
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Azetidine-2-carboxylic acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Val Xaa Leu Tyr Xaa Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 5
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Pipecolic acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Val Xaa Leu Tyr Xaa Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:38:

0604331 0998  
866260 "ETBE4060

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 5
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Pipecolic acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Xaa | Phe | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 5
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is Pipecolic acid"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Xaa | Trp | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2

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(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 5

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is trans-3-Methylproline"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Xaa | Phe | Phe | Asn | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 5

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is trans-3-Methylproline"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Xaa | Phe | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 5

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is trans-3-Methylproline"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

00043813-092999

Val Xaa Leu Tyr Xaa Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 5
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is trans-4-Fluoroproline"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Val Xaa Leu Tyr Xaa Phe Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
  - (B) LOCATION: 5
  - (D) OTHER INFORMATION: /product= "OTHER"
- /note= "Where Xaa is trans-4-Fluoroproline"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Val Xaa Leu Tyr Xaa Phe Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid

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- (C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 5  
(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is trans-4-Fluoroproline"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Val Xaa Leu Tyr Xaa Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Val Xaa Leu Tyr Pro Tyr Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS:  
(D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site  
(B) LOCATION: 2  
(D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Val Xaa Leu Tyr Pro Tyr Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:48:

0904-3813-092998

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is p-Fluorophenylalamine"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Xaa | Phe | Asn | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     | 10  |     |

- (2) INFORMATION FOR SEQ ID NO:49:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 6  
 (D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is p-Fluorophenylalamine"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Xaa | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     | 10  |     |

- (2) INFORMATION FOR SEQ ID NO:50:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2

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(D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 6
- (D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Thienylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Val Xaa Lys Tyr Pro Xaa Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:

0904381 092998  
856260 ET8E4060



(D) TOPOLOGY: circular

(ix) **FEATURE:**

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) **FEATURE:**

(A) NAME/KEY: Modified-site

(B) LOCATION: 6

(D) OTHER INFORMATION: /product= "OTHER"

```
/note= "Where Xaa is Thienylalanine"
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Val Xaa Leu Tyr Pro Xaa Phe Asn Asp Trp  
1 5 10

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: //product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 6

(D) OTHER INFORMATION: /product= "OTHER"

```
/note= "Where Xaa is Beta-Phenylserine"
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Val Xaa Leu Tyr Pro Xaa Phe Asn Asp Tyr  
1 5 10

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) ~~TOPOLOGY~~: circular

(ix) FEATURE:

(A) NAME//KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) **FEATURE:**

(A) NAME/KEY: Modified-site

(B) LOCATION: 6

(D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is Beta-Phenylserine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Xaa | Phe | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Phe | Tyr | Asn | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:57:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: //product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Phe | Tyr | Asn | Asp | Trp |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:58:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

004313 099990

```
(ix) FEATURE:
      (A) NAME/KEY: Modified-site
      (B) LOCATION: 7
      (D) OTHER INFORMATION: /product= "OTHER"
/note= "Where Xaa is p-Fluorophenylalanine"
```

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

(2) INFORMATION FOR SEQ ID NO:59:

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

(2) INFORMATION FOR SEQ ID NO:60:

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(2) INFORMATION FOR SEQ ID NO:61:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Val Xaa Leu Tyr Pro Phe Trp Asn Asp Trp  
 1 5 10

- (2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 7  
 (D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is Thienylalanine"

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Val Xaa Leu Tyr Pro Phe Xaa Asn Asp Tyr  
 1 5 10

- (2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 7

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(D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is Thienylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

(2) INFORMATION FOR SEQ ID NO:64:

(ix) **FEATURE:**

(ix) FEATURE:

```
/note= "Where Xaa is Beta-Phenylserine"
```

(2) INFORMATION FOR SEQ ID NO:65:

(ix) **FEATURE:**

(ix) FEATURE:

```
/note= "Where Xaa is Beta-Phenylserine"
```

(2) INFORMATION FOR SEQ ID NO:66:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Trp | Phe | Asn | Asp | Tyr |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:67:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 10  
 (D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is p-Fluorophenylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Phe | Phe | Asn | Asp | Xaa |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:68:

- (i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 10 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS:  
 (D) TOPOLOGY: circular

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site  
 (B) LOCATION: 2  
 (D) OTHER INFORMATION: /product= "Orn"

- (ix) FEATURE:  
 (A) NAME/KEY: Modified-site

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(B) LOCATION: 10

(D) OTHER INFORMATION: /product= "OTHER"  
/note= "Where Xaa is p-Fluorophenylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Xaa  
1 5 10

(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Val Xaa Leu Tyr Pro Phe Phe Asn Asp Phe  
1 5 10

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Phe  
1 5 10

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

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(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 10

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Thienylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Phe | Phe | Asn | Asp | Xaa |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:72:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 10

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Thienylalanine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Xaa | Leu | Tyr | Pro | Trp | Phe | Asn | Asp | Xaa |
| 1   |     |     |     | 5   |     |     |     |     | 10  |

(2) INFORMATION FOR SEQ ID NO:73:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 10 amino acids

(B) TYPE: amino acid

(C) STRANDEDNESS:

(D) TOPOLOGY: circular

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 2

(D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

(A) NAME/KEY: Modified-site

(B) LOCATION: 10

(D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Beta-Phenylserine"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

000000"000000



Val Xaa Leu Tyr Pro Phe Phe Asn Asp Xaa  
1 5 10

(2) INFORMATION FOR SEQ ID NO:74:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS:
- (D) TOPOLOGY: circular

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 2
- (D) OTHER INFORMATION: /product= "Orn"

(ix) FEATURE:

- (A) NAME/KEY: Modified-site
- (B) LOCATION: 10
- (D) OTHER INFORMATION: /product= "OTHER"

/note= "Where Xaa is Beta-Phenylserine".

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Val Xaa Leu Tyr Pro Trp Phe Asn Asp Xaa  
1 5 10

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